

WHAT IS CLAIMED IS:

1. A model adaptation apparatus for adapting a model used in pattern recognition in which input data in the form of a time series is classified into one of a predetermined number of models, said apparatus comprising:

data extraction means for extracting input data corresponding to a predetermined model, observed during a predetermined interval, and then outputting the extracted data; and

a model adaptation means for adapting said predetermined model using said data extracted during said predetermined interval by means of one of the most likelihood method, the complex statistic method, and the minimum distance-maximum separation theorem.

2. A model adaptation apparatus according to Claim 1, wherein said model adaptation means adapts the model by using also a freshness degree indicating the freshness of said extracted data.

3. A model adaptation apparatus according to Claim 2, wherein said model adaptation means adapts said predetermined model using, as said freshness degree, a function which varies depending upon the temporal position

of the extracted data in said predetermined interval.

4. A model adaptation apparatus according to Claim 1, wherein:

said pattern recognition is performed on the basis of a feature distribution in a feature space of the input data; and

said model adaptation means adapts the model using said feature distribution obtained from said extracted data.

5. A model adaptation apparatus according to Claim 1, wherein said model adaptation means adapts the model so that a measure indicating the degree to which said extracted data is observed in said predetermined model becomes maximum or minimum, by means of the most likelihood method, the complex statistic method, or the minimum distance-maximum separation theorem.

6. A model adaptation apparatus according to Claim 5, wherein said model adaptation means determines a parameter of said predetermined model which gives a maximum or minimum value of the measure based on the most likelihood method, the complex statistic method, or the minimum distance-maximum separation theorem, by means of the Newton descent method or the Monte Carlo method.

7. A model adaptation apparatus according to Claim 5, wherein the measure based on the minimum distance-maximum separation theorem is defined using a Bhattacharyya distance.

8. A model adaptation apparatus according to Claim 1, wherein said input data is voice data.

9. A model adaptation apparatus according to Claim 8, wherein said predetermined model is an acoustic model representing said input data during an interval which is not a voice interval.

10. A method of adapting a model used in pattern recognition in which input data in the form of a time series is classified into one of a predetermined number of models, said method comprising the steps of:

extracting input data corresponding to a predetermined model, observed during a predetermined interval, and then outputting the extracted data; and

adapting said predetermined model using said data extracted during said predetermined interval by means of one of the most likelihood method, the complex statistic method, and the minimum distance-maximum separation theorem.

11. A storage medium which stores thereon a program for executing, using a computer, adaptation of a model used in pattern recognition in which input data in the form of a time series is classified into one of a predetermined number of models, said program comprising the steps of:

extracting input data corresponding to a predetermined model, observed during a predetermined interval, and then outputting the extracted data; and

adapting said predetermined model using said data extracted during said predetermined interval by means of one of the most likelihood method, the complex statistic method, and the minimum distance-maximum separation theorem.

12. A pattern recognition apparatus for classifying input data in the form of a time series into one of a predetermined number of models, said apparatus comprising:

feature extraction means for extracting a feature value of said input data;

storage means for storing said predetermined number of models;

classifying means for classifying the feature value of the input data into one of said predetermined number of models;

data extraction means for extracting input data corresponding to a predetermined model, observed during a

predetermined interval, and then outputting the extracted data; and

a model adaptation means for adapting said predetermined model using said data extracted during said predetermined interval by means of one of the most likelihood method, the complex statistic method, and the minimum distance-maximum separation theorem.